

REMARKS/ARGUMENTS

Claims 28-56 have been cancelled without prejudice in response to restriction requirement. Herein, Claims 13, 16, 17, and 20-27 have been cancelled without prejudice. Claims 1, 5, 8, 18, and 19 have been amended. Applicants have added Claims 57-66 which have been rewritten to capture the subject matter of Claims 20-27 and Claim 13. Accordingly, **Claims 1-12, 14, 15, 18, 19, and 57-66** are now pending in the application. The following remarks address the pending rejections.

Rejections Under 35 U.S.C. §102:

Claims 1-7, 9-12, and 14-19 have been rejected under 35 U.S.C. §102(e) as being anticipated by the U.S. Patent to *Novotny* (U.S. Patent No. 6,625,341). Claim 1 has been amended to recite:

“a second beam splitter arranged to receive the monitor beam and reflect a portion of the monitor beam into the second detector element while directing another portion of the monitor beam onto the first detector element;

wherein the first and second detectors of each beam monitoring element measure optical power of the respective portions of a monitor beam such that both the angular misalignment and the positional misalignment of a working beam can be detected and adjusted ~~measures one of the monitor beams to provide optical information used for adjusting the switching array~~ such that the working beams enter the output channels having desired optical characteristics.”

The applicants respectfully submit that *Novotny* teaches a distinctly different invention from that expressed in the amended claims. For one, *Novotny* does not teach or suggest a monitor beam split into portions which are separately detected. Nor does *Novotny* teach using measurement of both portions of the same monitor beam to determine correct angular alignment for the working beam. At most, *Novotny* teaches that a single split beam can be measured to determine its power and that such power measurements can be used to determine if the output beam has a **correct position** (i.e., that the beam is centered in the fiber). This is important, because *Novotny* does not teach determining (or correcting) the misalignment (the correctness of the insertion angle) of the output beam based on the detection of a single split monitor beam. In fact, none of the teachings of *Novotny* can be accomplish aligning an output beam, let alone correctly positioning an output beam **and** correctly aligning the beam with the output fiber. Accordingly, the applicants respectfully request that this ground for rejecting Claim 1 be withdrawn and that Claim 1 as amended be allowed. Moreover, for at least the forgoing reasons,

the Applicants also respectfully request that rejections of claims dependent on Claim 1 (e.g., Claims 2-7, 9-12, and 14-19 are also inapposite and kindly request that these rejection also be withdrawn and that these claims be allowed as well.

Also, Claims 16 and 17 have been cancelled without prejudice. Consequently, this asserted grounds for rejection has become moot as to those claims.

Rejections Under 35 U.S.C. §103(a):

Claims 8 and 13 have been rejected under 35 U.S.C. §103 as being unpatentable. In particular, Claim 8 stands rejected under 35 U.S.C. §103 as being unpatentable over *Novotny* in view of *Boord et al.* (U.S. Patent No. 5,793,912). *Novotny* is insufficient as a reference, for at least the reasons explained hereinabove with respect to Claim 1. Additionally, nothing in *Boord et al.* can be construed to correct the insufficiencies of *Novotny*. For example, Boord et al does not include the limitations of:

“a second beam splitter arranged to receive the monitor beam and reflect a portion of the monitor beam into the second detector element while directing another portion of the monitor beam onto the first detector element;

wherein the first and second detectors of each beam monitoring element measure optical power of the respective portions of a monitor beam such that both the angular misalignment and the positional misalignment of a working beam can be detected and adjusted ~~measures one of the monitor beams to provide optical information used for adjusting the switching array~~ such that the working beams enter the output channels having desired optical characteristics.”

Consequently, the cited combination of references fails to establish a *prima facie* case of obviousness as to amended Claim 8. Accordingly, it is respectfully requested that this ground for rejection be withdrawn.

As to **Claim 13**, this claim is has been cancelled but rewritten in a slightly amended form as added **Claim 66**. Claim 66 recites an optical switch that includes:

“an array of beam monitoring elements arranged to receive monitor beams, each beam monitoring element comprising:

a monitor lens;

a monitor fiber;

a detector element;

wherein the monitor beam passes through the monitor lens into the monitor fiber and exits the monitor fiber where the optical power of the monitor beam is measured by the detector element; and

wherein each beam monitoring element measures a monitor beam to provide optical information used for adjusting the switching array such that the

working beams enter the output channels having desired optical characteristics wherein the detector elements measures optical power in a monitor beam such that both the angular misalignment and the positional misalignment of a working beam can be detected and adjusted.”

A particular difference from the *Novotny* reference is that the cited portion of the reference (*Novotny*) refers to a method and embodiment of **directly measuring the working beam** to obtain a power measurement. This different from the claimed invention which uses measurements of a **monitoring beam** that models the working beam properties. Moreover, the *Novotny* implementations require that the measured signal be coupled back into the working beam (*Novotny* 17:1-7). Such is not the case in **Claim 66**. Additionally, the application of *Novotny* can only be used to measure output beam position again failing to detect output beam insertion angle. The *Novotny* device cannot be used to determine **both** correct position and correct angle of insertion (angular alignment) for the beam into fiber. Consequently, the cited combination of references fails to establish a *prima facie* case of obviousness as to Claim 66 (i.e., amended Claim 13). Accordingly, it is respectfully requested that this ground for rejection be withdrawn and that Claim 66 be allowed to issue.

Allowable Subject Matter:

Claims 20-27 are objected to as being based on rejected base claims and due to some spelling informalities. Applicants acknowledge the Examiner’s objections. In response, the applicants cancel **Claims 20-27**. Added **Claims 57-65** contain substantially the same subject matter as that of Claims 20-27. In particular, Claim 57 is directed to a beam monitoring element having:

“a first light block having formed therein, a first aperture;

a monitor lens; and

a detector element for detecting a monitor beam after it passes through the first aperture and passes through the monitor lens wherein the monitor beam provides positional misalignment information concerning a working beam associated with the monitor beam.”

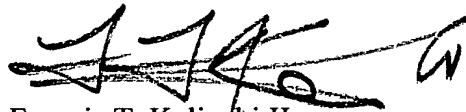
The Examiner has specifically, stated that (at pages 2-3 of the Office Action) he believes such subject matter to be allowable. Therefore, applicants respectfully submit that Claim 57 is in condition for allowance.

As to **Claim 58**, this claims is substantially analogous to Claim 20. As for **Claims 59-65**, these claims are substantially the same as Claims 21-27. Accordingly, the applicants respectfully submit that these claims are now in condition for allowance.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that this case is now in condition for allowance. If the Examiner has any continuing concerns regarding this case, he is respectfully requested to contact the undersigned at his earliest convenience at the number below.

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read 'F. T. Kalinski II', with a stylized flourish at the end.

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